CHEBAKOVA, V. G.

Chemical Abst.
Vol. 48 No. 9
May 10, 1954
General and Physical Chemistry

Solubility product of lead hydroxide. I. M. Korenman, F. S. Frum, and V. G. Chebakova. J. Gen. Chem. (U.S.S.R.) 22, 1771-3([illegible] Engl. translation).—See C.A. 47, 2018c. H. L. H.

L 23008-66 FSS-2/EWT(l)/EWT(m)/ETC(f)/EWG(m) JD/HW
ACC NR: AP6007662 SOURCE CODE: UR/0413/66/000/003/0031/0031

AUTHOR: Rozovskiy, V. M.; Fisher, T. L.; Basharina, Yu. I.; Chebakova, N. A. Kuz'min, V. A.; Maklyarskaya, A. A.; Avdeyeva, I. D.; Gavrilina, L. V.

51
B

ORG: none

TITLE: Iron-nickel alkaline battery. Class 21, No. 178401 [announced by the Scientific-Research Institute for Chemical Current (Nauchno-issledovatel'skiy institut khimicheskikh istochnikov toka)]

SOURCE: Izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, no. 3, 1966, 31

TOPIC TAGS: battery, alkaline cell

ABSTRACT: An Author Certificate has been issued for an iron-nickel alkaline battery with lamellar-perforated electrodes of which the negative one is made from hydrogen-reduced iron. In order to increase the capacity at low temperatures and after prolonged discharge, the active mass of the iron electrode is supplemented with additions of antimony oxide and sulfide sulfur. The additions range from 2--4% for antimony oxide and 0.4--0.6% for sulfide sulfur. The iron electrode is

Card 1/2 UDC: 621.355.8

L 23008-66
ACC NR: AP6007662

produced in the form of lamellar tape with 16 to 18% open surface.

[LD]

SUB CODE: 10/ SUBM DATE: 13Aug64/

Card 2/2 pla

CHEBALAK, A.N.; RAYKHER, Ya.G.

Automation of the processes of feed yeast production. Spirt.-prom. 28 no.2:16-20 '62. (MIRA 15:3)

1. Institut "Giprospirtvino".
(Yeast) (Automatic control)

L 7028-66

ACC NR: AP5026830 SOURCE CODE: UR/0286/65/000/017/0116/0116

AUTHOR: Lemarin'ye, K. P.; Drobny, B. V.; Chebalak, A. N.; Miroshkin, F. Ya.; Petryanov-Sokolov, I. V.; Basmanov, P. I.; Farber, L. D.; Khalupnaya, L. I.

ORG: none

TITLE: An installation for aseptic preservation of liquid and puree-type foodstuffs in large storage tanks. Class 53, No. 174520

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 17, 1965, 116

TOPIC TAGS: food technology, food product machinery, food sanitation

ABSTRACT: This Author's Certificate introduces: 1. An installation for aseptic preservation of liquid and puree-consistency food products in large storage tanks. The unit consists of interconnected sterilizer pipelines made according to Author's Certificate No. 168108, a vacuum cooler, hermetically sealed tanks equipped with locking devices made according to Author's Certificate No. 168109, and bacteriological filters. The unit is designed for continuous operation and for preventing admission of any unsterilized product. The unit is equipped with a discharge reservoir and with an intermediate collector connected to the reservoir and to the sterilizer. 2. A modification of this installation in which connections are simplified by using a disconnectable pipe between the hermetically sealed tanks and the vacuum cooler, and a portable pump with a flexible hose for unloading the food products from the tanks.

Card 1/2 UDC: 664.8.03

L 7028-66

ACC NR: AP5026830

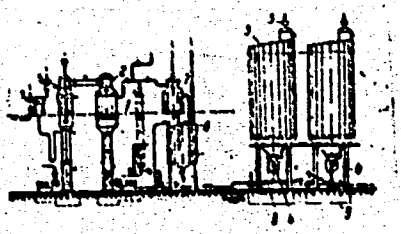

Fig. 1. 1--sterilizer; 2--vacuum cooler; 3--hermetically sealed tanks; 4--locking devices; 5--bacteriological filters; 6--discharge reservoir; 7--intermediate collector; 8--disconnectable pipe; 9--portable pump

SUB CODE: GO,IE,LS/ SUBM DATE: 16Mar64/ ORIG REF: 000/ OTH REF: 000

Card 2/2

CHEBALIN, P.

34008 CHEBALIN, P. Gornyy Kombayn
(Na Shakhtakh Donbassa Ochyerk)
Sov. Ukraina, 2, 1949, S. 27-35

SO: Letopis' Zhurnal'nykh Statey, Vol. 42, Moskva, 1949

CHEBALIN, P.

The inner beauty of man. Sov.shakht. 10 no.7:29-30 Jl '61.
Sov.shakht. 10 no.7:29-30 Jl'61. (MIRA 14:8)
(Coal miners)

CHEBALIN, Petr L'vovich; GUDKOVA, N., red.; MUKHIN, Yu., tekhn. red.

[The road of a hero] Dorogoi geroia. Moskva, Gos. izd-vo polit. lit-ry, 1962. 46 p. (MIRA 15:3)
(Donets Basin--Coal miners)

CHEBAN, A.A.

Adjustment of ship tacks in the process of oceanographic research. Trudy TSNIIMF no.39:66-79 '61. (MIRA 15:5)

1. Sotrudnik-korrespondent TSentral'nogo nauchno-issledovatel'skogo instituta morskogo flota.
(Oceanography) (Ocean currents)

CHEBAN, A.A.

Accuracy of dead reckoning of a ship's course. Inform.sbor. TSNIIMF no.66 Sudovozh.i sviaz' no.17:25-37 '61. (MIRA 16:2)
(Dead reckoning (Navigation))

CHEBAN, A.A.

Graphic adjustment applicable to position lines containing systematic and accidental errors. Trudy TSNIIMF 8 no.47:89-95 '63.
(MIRA 16:12)

CHEBAN, A.G.

Effective mass of the polarizing exciton. A. G. Cheban and V. A. Moskalenko. *Uchenye Zapiski Kishinev. Univ.* 17, 115-18(1955); *Referat. Zhur., Khim.* 1956, Abstr. No. 35158.—Theoretically it was calcd. that the effective masses of excitons in *s* and 2*p* levels are (in g.) NaCl 8.8×10^{-31}, 3.1×10^{-30}; KCl 7.4×10^{-31}, 2.35×10^{-30}; KBr 0.98×10^{-31}, 1.21×10^{-30}; resp. The decrease of mass when an exciton moves to the excited state is related to the decreased interaction with the phonon field.

V. S. Mikhailov

Distr: 4Ehc

S/058/61/000/010/070/100
A001/A101

24.7700

AUTHOR: Cheban, A.G.

TITLE: On the theory of F' absorption band in ionic crystals

PERIODICAL: Referativnyy zhurnal. Fizika, no. 10, 1961, 237-238, abstract 10E24 ("Uch. zap. Kishinevsk. un-t", 1960, v. 55, 183 - 195)

TEXT: The author investigates the band of light absorption in F'-centers (F-centers with affixed electrons) in transitions from a discrete level to continuous spectrum. The polaron effect is taken into account, i.e., photodissociation of the F'-center into a F-center and polaron. The calculation is conducted according to Perlin's method (RZhFiz, 1960, no. 9, 23232). The calculated shape of the absorption band agrees qualitatively with experiments.

V. Trubitsyn

[Abstracter's note: Complete translation]

Card 1/1

41689
S/837/61/049/000/001/011
B102/B104

AUTHOR: Cheban, A. G.

TITLE: Excited states of an F'-center

SOURCE: Kishinev. Universitet. Uchenyye zapiski. v. 49, 1961, 19-25

TEXT: The author continues previous work (Uch. zap. KGU 55, 183, 1960) in which he studied the photo-ionization of an F'-center. Here the excited spectrum of an F' center is calculated and the polaron wave function of this spectrum is derived more exactly than before. The Hamiltonian of the crystal in effective-mass representation

$$\hat{H} = -\frac{\hbar^2}{2\mu}(\Delta_1 + \Delta_2) + u_1(r_1) + u_2(r_2) + u_{12}(r_{12}) + \sum_s A_s(r_1)q_s + \sum_s A_s(r_2)q_s + \frac{\hbar\omega}{2}\sum_s\left(q_s^2 - \frac{\partial^2}{\partial q_s^2}\right), \quad (1)$$

and the approximate wave function of the ground state, rewritten in variables of the polaron theory

Card 1/7

Excited states of an F'-center

$$\Psi_{s,\dots,n_\chi}(\vec{r}_1, \vec{r}_2, \xi q) = \Psi_{F'}(r_1)\Psi_{F'}(r_2)\varphi_s(\xi)\prod{}' \Phi_{n_\chi}(q_\chi - r_{i,F'}). \quad (2)$$

(cf. ZhETF, 21, 11, 1951), are used to investigate the state of an F' center in which one of the electrons is excited. $\Psi_{F'}(r)$ is the wave function of an electron localized in an F' center and $\varphi_s(\xi)$ is an approximate wave function, determined from the variation of

$$\overline{H}_s = \int \varphi_s^*(\xi)\left[-\frac{\hbar^2}{2M_0}\Delta_\xi + \frac{\hbar\omega}{2}\sum_\chi (q_{\chi\xi} - q_{\chi 0})^2\right]\varphi_s(\xi)\, d\xi. \quad (3);$$

M_0 is the polaron effective mass and Φ_{n_χ} are the wave functions of the harmonic oscillators of the lattice.

Excited states of an F'-center

$$\hat{W}(r_1, r_2, q) = U_1(r_1) + U_{12}(r_{12}) + \sum A_k(r_1)(q_k - q_{k_0}) + \\ + \sum A_k(r_2)(q_k - q_{k_F}). \qquad (6)$$

is taken as a perturbation operator. q_{k_f} is the displacement of the equilibrium position of lattice oscillators, caused by an electron localized in the polarization potential well of a polaron, and q_{k_0} is that caused by an electron localized in the F' center. In zeroth approximation

$$\Psi_n^0(r_1, r_2) = \Psi_0(|\vec{r}_1 - \vec{\xi}|)\Psi_F(r_2), \qquad (10),$$

where Ψ_0 and Ψ_F are the wave functions of electrons localized respectively in the polaron and in F-center potential wells. These functions are

Card 3/7

Excited states of an F'-center

considered as normalized ones. For the adiabatic potential

$$F(q) = I_1 + I_2 - ce^2 \int \frac{\psi_0^2(|\vec{r}_1 - \vec{\xi}|)\,\psi_F^2(r_2)}{|\vec{r}_1 - \vec{r}_2|} d\tau_1 d\tau_2 + \frac{\hbar\omega}{2} \sum_{\alpha} (q_\alpha - q_{\alpha_0})^2 \qquad (16)$$

is obtained; I_1 and I_2 are the adiabatic potentials of F-center and polaron. From the Schrödinger equation

$$-\frac{\hbar^2}{2M_0} \Delta_\xi \varphi_\alpha(\xi) + K(\xi)\,\varphi_\alpha(\xi) = E_{n_1 \ldots n_\alpha \ldots}\,\varphi_\alpha(\xi) \qquad (23)$$

whose solution is the polaron wave function $\varphi_\alpha(\xi)$ and whose potential is given by

Card 4/7

Excited states of an F'-center

$$K(\xi) = -\frac{e^2(3\gamma^2-1)}{8(\gamma^2-1)^3}\left(e^{-2\gamma\alpha_0\xi}-e^{-2\alpha_0\xi}\right)- \\ -\frac{e^2\alpha_0}{8(\gamma^2-1)^2}\left[\gamma e^{-2\gamma\alpha_0\xi}+(2\gamma^2-1)e^{-2\alpha_0\xi}\right], \quad (25)$$

$$\gamma = 1+\frac{16}{5\,sc}. \quad (26),$$

the discrete level of the polaron ground state is calculated, i. e. the variation of $E(\beta)$ is determined:

$$E(\beta) = \int \varphi_\alpha^*(\xi)\left[-\frac{\hbar^2}{2M_0}\Delta_\xi + K(\xi\gamma)\right]\varphi_\alpha(\xi)\,d\tau_\xi = min, \quad (28)$$

$$\frac{E(\beta)}{A} = \beta^2 - 2A_1\beta^3\left[\frac{1}{(a_1\gamma+\beta)^2}-\frac{1}{(a_1+\beta)^2}\right]-\frac{2B\beta^2}{(a_1+\beta)^2}-\frac{2C\beta^2}{(a_1\gamma+\beta)^2}, \quad (29)$$

$$A_1 = \frac{(3\gamma^2-1)a_1}{(\gamma^2-1)^3};\quad B = \frac{a_1^2(2\gamma^2-1)}{(\gamma^2-1)^2};\quad C = \frac{a_1^2\gamma}{(\gamma^2-1)^2}; \quad (30)$$

$$A = \frac{M_0e^4}{2\hbar^2\varepsilon^2};\quad a_1 = \frac{5}{16}\frac{\mu}{M_0}\,sc. \quad (31)$$

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Excited states of an F'-center

$$\varphi_0(\xi) = \frac{\beta^{3/2}}{\sqrt{\pi}} \exp(-\beta\xi). \qquad (27).$$

(29) is minimized numerically for NaCl (β/a_0=3.4), KCl (3.0) and KBr (2.7) and for E, -0.053, -0.029 and -0.021 ev is obtained. For the potential energy

$$K(\xi) = \begin{cases} -|K(0)| & \text{при } \xi < \xi_0 \\ 0 & \text{при } \xi > \xi_0, \end{cases} \qquad (32)$$

$$K(0) = \frac{5}{8} A \xi_0 \frac{(2\gamma^3 - 3\gamma^2 + 1)}{(\gamma-1)(\gamma^2-1)^2}, \qquad (33)$$

$$A = \frac{\mu e^4}{2\hbar^2 \varepsilon_0^2}. \qquad (34)$$

with ξ_0 = 0.32 Å (NaCl), 0.44 Å (KCl) and 0.73 Å (KBr) the following

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Excited states of an F'-center

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B102/B104

is obtained: $K(0) = -0.11$ ev (NaCl), -0.058 ev (KCl) and -0.051 ev (KBr). For the continuous spectrum of a polaron in a square potential well $K_o^2 = K^2 + \frac{2M_o}{\hbar^2}|K(0)|$ for $\xi < \xi_o$ and $K = (2E_eM_o/\hbar)^{1/2}$ for $\xi > \xi_o$. There are 2 tables.

Card 7/7

CHERAN, A.G.

Theory of the thermal ionization of F'-centers. Opt. i spektr 10 no.4:493-499 Ap '61. (MIRA 14:3)
(Ionic crystals) (Ionization)

24750

43124
S/181/62/004/011/024/049
B125/B186

AUTHORS: Perlin, Yu. Ye., and Cheban, A. G.

TITLE: On the theory of autoionization of local states

PERIODICAL: Fizika tverdogo tela, v. 4, no. 11, 1962, 3220-3227

TEXT: The quasi-classical method of calculating the tunnel decay of a hydrogen-like atom (L. D. Landau and Ye. M. Lifshits. Kvantovaya mekhanika (Quantum mechanics), GITTL 1948) in a strong electromagnetic field is generalized to the case where the electron is localized in a Coulomb field distorted at small distances from the center. A polaron at rest and an excited F-center are taken as examples. When calculating the self-consistent state of a Pekar polaron (S. I. Pekar. Issledovaniya po elektronnoy teorii kristallov (Investigations on the electron theory of crystals), GITTL 1951) in a strong electric field it is necessary to consider the deformation of the self-consistent field besides the direct interaction between the electron and the external field. If $\mathcal{E} \ll \mathcal{E}_{crit}$ (for crystals of the alkali-halide type $\mathcal{E}_{crit} \sim 3 \cdot 10^6$ v/cm), the deformation of the self-consistent field can be neglected. By this approximation the ionization

Card 1/3

probability

$$w_{ion} = a_0^3 \left(\frac{4}{\delta n^2}\right)^{2n_2} f(\eta_0) \exp\left(-\frac{2}{3\delta n^3}\right), \qquad (1.25),$$

$$f(\eta_0) = \eta_0^{-2n_2} \exp\left[\eta_0\left(\frac{1}{n} - a_0\right)\right]. \qquad (1.26)$$

can be derived from the electron wave function and the energy of the self-consistent state of the polaron at rest at $\xi = 0$, using the expression $\psi(r) = \psi_1(\xi)\psi_2(\xi)$ for the axially symmetrical solution. Thereby $a_0 = (5/16)\,\mu e^2 c/\hbar^2$, $n = (-2E)^{-1/2}$, $n_2 = n\beta_2 - 1/2$, β_2 is one of the two constants for separation of variables. For η_0 of the parabolic coordinate $\eta = r-z$, the inequality $1 \ll \eta_0 \leq 2|E|/\mathcal{E}$ is valid. Thus, for KCl crystals the autoionization probabilities, given in sec^{-1}, were 4.5, 7.1, $3\cdot10^5$, $2.7\cdot10^7$, $2.2\cdot10^8$. These values correspond to $\mathcal{E}$ = (0.6, 0.7, 0.8, 0.9, and $9.1)\cdot10^6$ v/cm. The critical field strength is apparently $\mathcal{E} \sim 8\cdot10^5$ v/cm. The autoionization probability for an excited F-center with a transition of a localized electron from the potential well into the free state is derived

similarly by solving the wave equation for the electron wave function ψ_2 in the presence of an external homogeneous field. For ψ_2 an exponential expression with parabolic coordinates is used. The autoionization probabilities for an excited F-center were $6.2 \cdot 10^4$; $9.5 \cdot 10^5$; $5.0 \cdot 10^6$; $1.7 \cdot 10^7$ sec^{-1} and $4.9 \cdot 10^9$ for the $\mathcal{E}$-values (2.2; 2.3; 2.4; 2.5; and 3.0)$\cdot 10^6$ v/cm. The autoionization is considered to be the only possible reason for the decay of excited F-centers near absolute zero. There are 2 figures and 2 tables.

ASSOCIATION: Kishinevskiy gosudarstvennyy universitet (Kishinev State University)

SUBMITTED: June 25, 1962

37222
S/051/62/012/004/008/015
E039/E485

24.7000

AUTHORS: Perlin, Yu.Ye., Cheban, A.G.

TITLE: The capture of polarons by F-centres

PERIODICAL: Optika i spektroskopiya, v.12, no.4, 1962, 517-518

TEXT: The results obtained in a previous paper on this subject are made more precise by taking into account the exponential decrease of the effective field W_F acting on the polarons as the translation vector $\xi \longrightarrow \infty$. It is shown that this reduces the probability of a transition by an order of magnitude. In particular the effective capture cross-section for polarons in KCl at a temperature of 200°K is 9.5×10^{-16} cm^2 and for NaCl is 9×10^{-15} cm^2. By measuring the photo-conductivity of coloured crystals, values of $\eta u \tau$ can be calculated: η is the quantum yield by the internal photo-effect of F-centres, u the mobility and τ the lifetime of the polarons. Using recombination theory, an expression is obtained for the lifetime of the current carriers

$$\tau = \tau_{diff} + \tau_{capt} e^{\frac{eW_F(\xi_0)}{kT}} \qquad (2)$$

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The capture of polarons ...

where τ_{diff} - diffusion time of polarons to F-centres; τ_{capt} - ligetime of a carrier with respect to quantum transitions at discrete levels; $W_F(\xi)$ - potential at "capture point".

At $\xi_0 = \sqrt{\frac{\sigma_F}{\pi}}$, this value is practically equal to zero in the low temperature region investigated where $\eta = 1$. Values of $u\tau$ are tabulated where τ is calculated from Eq.(2) and u from a formula by Pekar. These values of $u\tau$ show good agreement with well-known experimental data for crystals of KCl and NaCl. There is 1 table.

SUBMITTED: May 18, 1961

PERLIN, Yu.Ye.; CHEBAN, A.G.

On the theory of field ionization of local states.
Fiz. tver. tela 4 no.11:3220-3227 N '62. (MIRA 15:12)

1. Kishinevskiy gosudarstvennyy universitet.
(Quantum theory) (Ionization)

L 10067-63 EWT(1)/BDS/EEC(b)-2--AFFTC/ASD/ESD-3--IJP(C)
ACCESSION NR: AR3000371 S/0058/63/000/004/E060/E060

SOURCE: RZh. Fizika, Abs. 4E404

58

AUTHOR: Perlin, Yu. Ye; CHeban, A. G.

TITLE: On the theory of the decay of excited color centers in an electric field.

CITED SOURCE: Tr. po fiz. poluprovodnikov. Kishinevsk. un-t, vyp. 1, 1962, 3-14

TOPIC TAGS: color center decay, conductivity of semiconductors

TRANSLATION: The probability of disintegration of an excited F-center by an external electric field is calculated. It is assumed that the intensity of this field E is much small than critical, at which the polarons disintegrate. The calculation is made within the framework of the continual model of the F-center in the adiabatic approximation. Use is made of the fact that in the zero approximation the excited state of the F-center can be interpreted as the motion of an undeformed polaron in a Coulomb field which is distorted at small distances.

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ACCESSION NR: AR3000371

0

The quadratic Stark shift is disregarded. The solution of the equation for the polaron is sought by a variational method. A critical distance R sub 0 is introduced in such a way, that when the distance R of the polaron to the center is smaller than R sub 0 it is possible to neglect its interaction with the external field, while when R is greater than R sub 0 it is possible to neglect the difference between the potential energy of the polaron and its Coulomb energy, and the solutions for these two regions join together at R sub 0. Calculation of the tunnel current throught the barrier is carried out in the quasi-classical approximation. At absolute zero the quantum yield of the photo effect for K Cl is practically equal to zero up to E equals 2.6 times 10 sup 6 v/cm. Extrapolation to larger fields shows that in the narrow field interval from 2.6 times 10 sup 6 to 2.8 times 10 sup 6 v/cm the quantum yield increases to unity. The experimental curve is similar in shape to the theoretical curve, but the quantum yield approaches unity even at E equals 300,000 v/cm. The reason for the discrepancy may be related both with the errors in the calculation and the inhomogeneity of the external field, as well as with the sufficiently low temperature at which the experiments are performed. E. Nagayev

DATE ACQ: 14May63 ENCL: 00 SUB CODE: PH

lm/nh
Card 2/2

S/051/63/014/004/009/026
E039/E420

AUTHOR: Cheban, A.G.

TITLE: The theory of photoionization of F' centers

PERIODICAL: Optika i spektroskopiya, v.14, no.4, 1963, 505-512

TEXT: The ionization of F' centers in ionic crystals is investigated and expressions obtained for the probability of multi-phonon photoionization of F' centers in two cases of absorption (a) with the formation of polarons and (b) with the formation of an electron band. Polaron absorption curves are obtained for NaCl crystals and also absorption curves with the formation of an electron band for crystals of NaCl, KCl and KBr. It is shown that the positions of the maxima of these curves and their half widths compare well with experimental values. It appears that polaron absorption bands have not been observed experimentally because they occur in the infrared region of the spectrum and have a low intensity. According to calculations for the NaCl crystal the ratio of the probability of ionization in the two cases is

$$\frac{W^{band}_{ion\ max}}{W^{pol}_{ion\ max}} = 0.7 \times 10^2$$

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E039/E420

The theory of photoionization ...

There are 2 figures and 1 table.

SUBMITTED: July 4, 1962

Card 2/2

ACCESSION NR: AR4044001 S/0058/64/000/006/E046/E046

SOURCE: Ref. zh. Fizika, Abs. 6E339

AUTHOR: Cheban, A. G.

TITLE: Autoionization of local centers in ionic crystals

CITED SOURCE: Uch. zap. Kishinevsk. un-t, v. 63, 1963, 27-34

TOPIC TAGS: tunnel decay, polaron, autoionization, ionic crystal, polaron decay, crystal center

TRANSLATION: Examines the tunnel decay of a polaron and also of the excited states of the F-center in three cases: a) "self-consistent" excited states with polaron formation; b) "nonself-consistent" states with the formation of a zonal electron; c) "self-consistent" states with formation of a zonal electron. It is explained that polaron decay occurs with field $E \sim 8 \cdot 10^5$ v/cm. Case a) is not essential since polaron tunnel decay occurs with weaker fields than the excited states of the F-center. Case b) was also not essential since an excited electron in a "nonself-consistent" excited state can go into the "self-consistent" excited state before

Card 1/2

ACCESSION NR: AR4044001

it can tunnel into the conductivity zone. Assuming that case c) is realized in ionic crystals, there is calculated the quantum yield of the intrinsic photoeffect.

SUB CODE: NP, SS ENCL: 00

Card 2/2

PEPLIN, Yu.Ye.; CHEBAN, A.G.

The K-absorption band in ionic crystals. Uch.zap.Kish.un. 69:1-2 '64. (MIRA 18:12)

ACCESSION NR: AP4011486 S/0051/64/016/001/0069/0075

AUTHOR: Tsukerblat, B.S.; Cheban,A.G.

TITLE: Disintegration and formation of F' centers in ionic crystals

SOURCE: Optika i spektroskopiya, v.16, no.1, 1964, 69-75

TOPIC TAGS: ionic crystal, F center, F' center, F center formation, F center annihilation, polaron trapping cross section, polaron scattering cross section, many-phonon transitions, one-phonon transitions, color center, potassium bromide

ABSTRACT: In earlier papers by the authors (A.G.Cheban, Opt.i spektr.10,493,1961; Yu.Ye.Perlin,A.G.Cheban and B.S.Tsukerblat,Uch.zap.Kishinevsk.univ,Seriya fiz.49,11, 1961; A.G.Cheban,Ibid.49,19,1961) there were considered thermal ionization of F' centers and the inverse process: direct many-phonon trapping of a polaron by an F center with formation of an unexcited F' center. It was shown that, in addition to the ground state, an F' center has at least one discrete level, which corresponds to motion of an undeformed polaron in an effective short-range field. In the present paper there are considered two possible mechanisms of thermal trapping (capture) of a

Card 1/2

ACC.NR: AP4011486

polaron by an F center in ionic crystals: the many-phonon and the single phonon processes. Equations are derived for the total trapping cross section and for the cross section for scattering of a polaron by an F center with the formation of an unexcited F' center at an intermediate stage. For purposes of illustration the trapping and scattering cross sections are calculated for the specific case of KBr, and the results of the calculations are compared with the experimental data of A.C.Redfield (Phys.Rev.94,537,1954). The agreement is considered to be satisfactory: the calculated total trapping cross section for KBr at 200°K is 7.1 x 10^{-14} cm^2; the corresponding experimental value is 2 x 10^{-14} cm^2. Detailed expressions for some of the parameters entering into the computation formulas are given in an appendix. "The authors are pleased to express their gratitude to Yu.Ye.Perlin for assistance in the work." Orig.art.has: 56 formulas.

ASSOCIATION: none

SUBMITTED: 11Mar63 DATE ACQ: 14Feb64 ENCL: 00

SUB CODE: PH NR REF SOV: 007 OTHER: 002

Card 2/2

L 58535-65 EEC(b)-2/EWT(1)/T Pi-4 IJP(c) GG

ACCESSION NR: AP5012533 UR/0181/65/007/005/1303/1311

AUTHOR: Cheban, A. G.

TITLE: Thermal ionization of impurity centers in the presence of an external electric field

SOURCE: Fizika tverdogo tela, v. 7, no. 5, 1965, 1303-1311

TOPIC TAGS: thermal ionization, group IV element, binary compound, impurity center

ABSTRACT: The author analyzes the thermal ionization of impurity centers in semiconductors of group IV, and also in binary compounds $A^{III}B^{V}$, in the presence of an external electric field. It is assumed that the energy levels of the impurity centers are located very close to the edge of the conduction band or the valence band. Impurity centers in substances with simple nondegenerate bands are considered. It is shown that ionization is produced in two stages. The first consists of a nonradiative transition of the localized electron from the ground state to the first excited level. The second stage constitutes tunnel decay of the excited states of the impurity centers. The ionization of the centers in InSb and GaAs is considered

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ACCESSION NR: AP5012533

2

by way of an example. "The author thanks Yu. Ye. Perlin for valuable advice and interest in the work." Orig. art. has: 1 figure and 53 formulas.

ASSOCIATION: Kishinevskiy gosudarstvennyy universitet (Kishinev State University)

SUBMITTED: 30Jul64 ENCL: 00 SUB CODE: SS, GC

NR REF SOV: 002 OTHER: 004

Card 2/2

L 6991-66 EPA(s)-2/EEC(k)-2/EWT(1) IJP(c)

ACC NR: AP5017329 SOURCE CODE: UR/0181/65/007/007/2226/2229

AUTHOR: Pokatilov, Ye. P.; Cheban, A. G.; Rusanov, M. M.

ORG: Kishinev State University (Kishinevskiy gosudarstvennyy universitet)

TITLE: Thermal ionization of miniature traps in cubic piezoelectrics

SOURCE: Fizika tverdogo tela, v. 7, no. 7, 1965, 2226-2229

TOPIC TAGS: piezoelectric crystal, piezoelectric property, thermal ionization, Hamiltonian equation, electron capture, electron transition

ABSTRACT: The piezoelectric behavior of semiconductors of type $A_{III}B_{V}$ (e.g. InSb, GaAs), are related to processes of ionization of minute traps and electron capture. The Hamiltonian of electron interactions with oscillations and defects in piezoelectric crystals, obtained by a canonical transformation, is shown to be

$$H = \varepsilon(\mathbf{P}) + H_{e,x} + V(R).$$

Here, ε (P) is the electron energy; $H_{e,x}$ is the energy of interaction with acoustical oscillations of the lattice; and $V(R)$ is the defect interaction enrgy. Equations are given for each of the above terms, based on approximate calculations using Shroedinger equation. Wave functions are also presented for discrete spectra; and from these the overall probability for zone transitions from the 1s-state to 2p and 2s-levels is

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L 6991-66
ACC NR: AP5017329

calculated. Based on the values for $P_{i,j}$--the probability of a non-radiating transition from i to j, and for $W_{2p,1s}$--the probability of the spontaneous optical transition $2p$ to $1s$, formulas are derived for σ_{cap}--effective capture diameter and σ_{dis}--effective dispersion diameter. Numerical data is presented for InSb for the probabilities $P_{i,j}$; P_{i0_n} (a parameter incorporating $P_{i,j}$ and $W_{2p,1s}$); σ_{cap}; σ_{dis}; and σ_0 (effective capture diameter for the degeneration of the exited levels $2p$, $2s$) as a function of deformation and piezoelectric behavior at T = 5°K and 20°K. Orig. art. has: 1 table.

SUB CODE: SS/ SUBM DATE: 17Nov64/ ORIG REF: 001/ OTH REF: 002

Card 2/2 nda

L 9257-66 EWT(1)/T/EWA(h) IJP(c) AT

ACC NR: AP5022715 SOURCE CODE: UR/0181/65/007/009/2735/2739

44,55 44,55

AUTHOR: Cheban, A. G.; Katana, P. K.

44,55

ORG: All-Union Scientific Research Institute of Current Sources, Moscow (Vsesoyuznyy nauchno-issledovatel'skiy institut istochnikov toka)

TITLE: On the theory of thermofield ionization of impurity centers

SOURCE: Fizika tverdogo tela, v. 7, no. 9, 1965, 2735-2739

21,44,55 21,44,55

TOPIC TAGS: thermal ionization, impurity center, semiconductor research, semiconductor theory

ABSTRACT: The authors examine various mechanisms for thermofield ionization of electron impurity centers with regard to tunnel decay and thermal ionization stimulated by an electric field (Frenkel mechanism) in semiconductors of the GaAs and InSb types. Both the direct and successive-transition mechanisms are considered for thermofield ionization of the impurity center from the ground state s_1 to the conduction band through the first excited level s_2. A formula is given for the total probability of ionization with regard to both types of transition, and expressions are derived for calculating the various parameters which appear in this formula. An equation is given for the deformation potential which serves as the operator for interaction of an electron with acoustic vibrations of the crystal lattice for the case of nonradia-

Card 1/2

L 9257-66

ACC NR: AP5022715

tive transitions. The effective capture diameter and current carrier concentration are calculated as functions of the intensity of the applied electric field. The results are tabulated for T = 11.3°K. Current-voltage characteristics are studied for deviations from Ohm's law at low temperatures. The proposed ionization mechanism fails to account for the considerable deviations from Ohm's law observed experimentally. An explanation of this phenomenon as well as the negative conductivity which appears at helium temperatures would require taking account of mechanisms of impact ionization and recombination in an electric field. Orig. art. has: 21 formulas, 1 table.

SUB CODE: 20/ SUBM DATE: 05Apr65/ ORIG REF: 004/ OTH REF: 003

Card 2/2

L 25486-66 EPF(n)-2/EWT(1)/ETC(m)-6 IJP(c) WW

ACC NR: AP6009681 SOURCE CODE: UR/0181/66/008/003/0894/0899

49
B

AUTHOR: Rozneritsa, Ya. A.; Cheban, A. G.

ORG: All-Union Scientific Research Institute of Current Sources (Vsesoyuznyy nauchno-issledovatel'skiy institut istochnikov toka)

TITLE: Optic absorption in semiconductors with participation of impurity centers in an external magnetic field

SOURCE: Fizika tverdogo tela, v. 8, no. 3, 1966, 894-899

TOPIC TAGS: light absorption, absorption edge, semiconductor impurity, impurity center, impurity level, transition probability, valence band

ABSTRACT: To explain the experimentally observed shift of the edge of the intrinsic absorption of compounds of the $A_{III}B_V$ type with increasing impurity density, the authors analyze the effect that may be produced by application of an external quantizing magnetic field on a compensated semiconductor containing shallow donor local centers. Only allowed transitions are considered, and the analysis is restricted to optical transitions between the valence band and the ground state of the donor local center. The transition probability is calculated in a standard quantum-mechanical manner and it is shown that the absorption coefficient obtained from the transition probability is an oscillating function in the presence of a magnetic field. By determining the distance between neighboring maxima of this function it would be possible to determine directly the effective mass of the carrier in the band. Orig. art. has: 28 formulas.

SUB CODE: 20/ SUBM DATE: 09Aug65/ ORIG REF: 001/ OTH REF: 009

Card 1/1

APPROVED FOR RELEASE: 06/12/2000 CIA-RDP86-00513R000308220003-3"

L 26765-66 EWT(1)/EWT(m)/T IJP(c) JD/JG/GG

ACC NR: AT6005618 UR/2837/64/069/000/0001/0002

66

B+1

AUTHOR: Perlin, Yu. Ye.; Cheban, A.G.

ORG: Kishinev State University, Kishinev (Kishinevskiy Gosuniversitet)

TITLE: On the problem of K-band absorption in ionic crystals

SOURCE: Kishinev. Universitet, Uchenyye zapiski, v. 69, 1964, 1-2

TOPIC TAGS: crystal, ionic crystal, alkalai halide , crystal absorption, absorption band, polaron, ionization, K band, L band

ABSTRACT: Previous work of the authors and others is reviewed to establish the theory that the K-absorption band can be related to photo-transitions of electrons in crystals from the ground F-center state into a polaron state. Certain computed and experimentally determined parameters (location of maxima of $\hbar\Omega$, and halfwidths) of the F-photoionization curves involving creation of polarons and K-bands are tabulated for the ionic alkali-halide crystals: NaCl, KCl, KBr, KI, RbCl, RbBr, RbI. Good correspondence of the experimentally determined with the computed data is considered as supporting the hypothesis of phototransition into ionized polaron states as the origin of the K-band in alkali halide crystals. Interpretation of the L-bands requires additional energy zone data evaluation for the alkali halide crystals. Orig. art. has: 1 table.

SUB CODE: 20/ SUBM DATE: None/ ORIG REF: 003 OTH REF: 003

Card 1/1

ACC NR: AP6015452 (A) SOURCE CODE: UR/0181/66/008/005/1374/1378

AUTHOR: Rozneritsa, Ya. A.; Cheban, A. G.

48
B

ORG: All-Union Scientific Research Institute of Current Sources, Kishinev (Vsesoyuznyy institut istochnikov toka)

TITLE: Theory of thermofield ionization of F-centers

SOURCE: Fizika tverdogo tela, v. 8, no. 5, 1966, 1374-1378

TOPIC TAGS: thermal ionization, multiphonon transition, F band, internal photoeffect, quantum yield

ABSTRACT: The authors examine multiphonon transitions caused by the interaction of an electron of the F-center with acoustic oscillations of the lattice and the thermal ionization of the excited self-consistent 2p-state of the F-center under the action of the operator of the perturbations for multiphonon transitions, with the formation of a zone electron. The shift of the theoretical curve of the quantum yield toward stronger fields than the experimental curve is due to thermal ionization as well as autoionization. An expression is derived for the probability of the multiphonon thermofield ionization. The temperatures at which the thermal ionization of the excited F-center plays a dominant role are examined. An expression is derived for the quantum yield of the internal photoeffect; this expression neglects the autoionization of the excit-

ACC NR: AP6015452

ed self-consistent 2p-level of the F-center and the radiationless transitions. The experimental and theoretical curves of the dependence of the quantum yield for a KCl crystal on the intensity of the applied field are in good agreement. Orig. art. has: 25 formulas, 1 figure.

SUB CODE: 20/ SUBM DATE: 15Aug65/ ORIG REF: 007/ OTH REF: 004

L 09385-67 EWT(1) IJP(c)
ACC NR. AR6033789 SOURCE CODE: UR/0058/66/000/007/E070/E0[illegible]

AUTHOR: Cheban, A. G.; Rozneritsa, Ya. A.; Katana, P. K.; Prepelitsa, B. V.

TITLE: Effect of electric and magnetic fields on local states in semiconductors and dielectrics

SOURCE: Ref. zh. Fizika, Abs. 7E534

REF SOURCE: Uch. zap. Kishinevsk. un-t, no. 80, 1966, 69-98

TOPIC TAGS: electric field, magnetic field, semiconductor, dielectric, impurity center, impurity absorption, optical absorption

ABSTRACT: An investigation is made of the mechanism of thermal field ionization of impurity centers in semiconductors. A formula which takes into account the dis- integration of impurity centers is derived for charge-carrier concentration as a function of electric field intensity. The effects of the electric and magnetic fields on the coefficient of optical absorption as a function of impurity centers is also investigated. It is shown that in the region of impurity absorption, as well as in fundamental absorption, the electrical field displaces the absorption edge toward frequencies. The effect of the magnetic field on the impurity absorption edge

CHEBAN, A.Ye., zasluzhennyy vrach USSR (Krivoy Rog, Dzerzhinskiy rayon, ul.Kazanskaya, d.13)

Dysgerminoma of the ovary as a cause of acute abdomen. Nov. khir.arkh. no.3:86-87 My-Je '59. (MIRA 12:10)

1. Khirurgicheskoye otdeleniye 1-y Krivorozhskoy gorodskoy bol'nitsy.
(OVARIES--TUMORS) (ABDOMEN)

CHEBAN, A. Ye., zasl. vrach UkrSSR (Krivoy Rog, ul. Kazanskaya, d. 13)

Two observations of cysts of the pancreas developing after pancreatitis. Nov. khir. arkh. no.2:72-73 '62. (MIRA 15:2)

1. Khirurgicheskoye otdeleniye (zav. - A. Ye. Cheban) 1-y gorodskoy bol'nitsy Krivogo Roga.

(PANCREAS--DISEASES) (CYSTS)

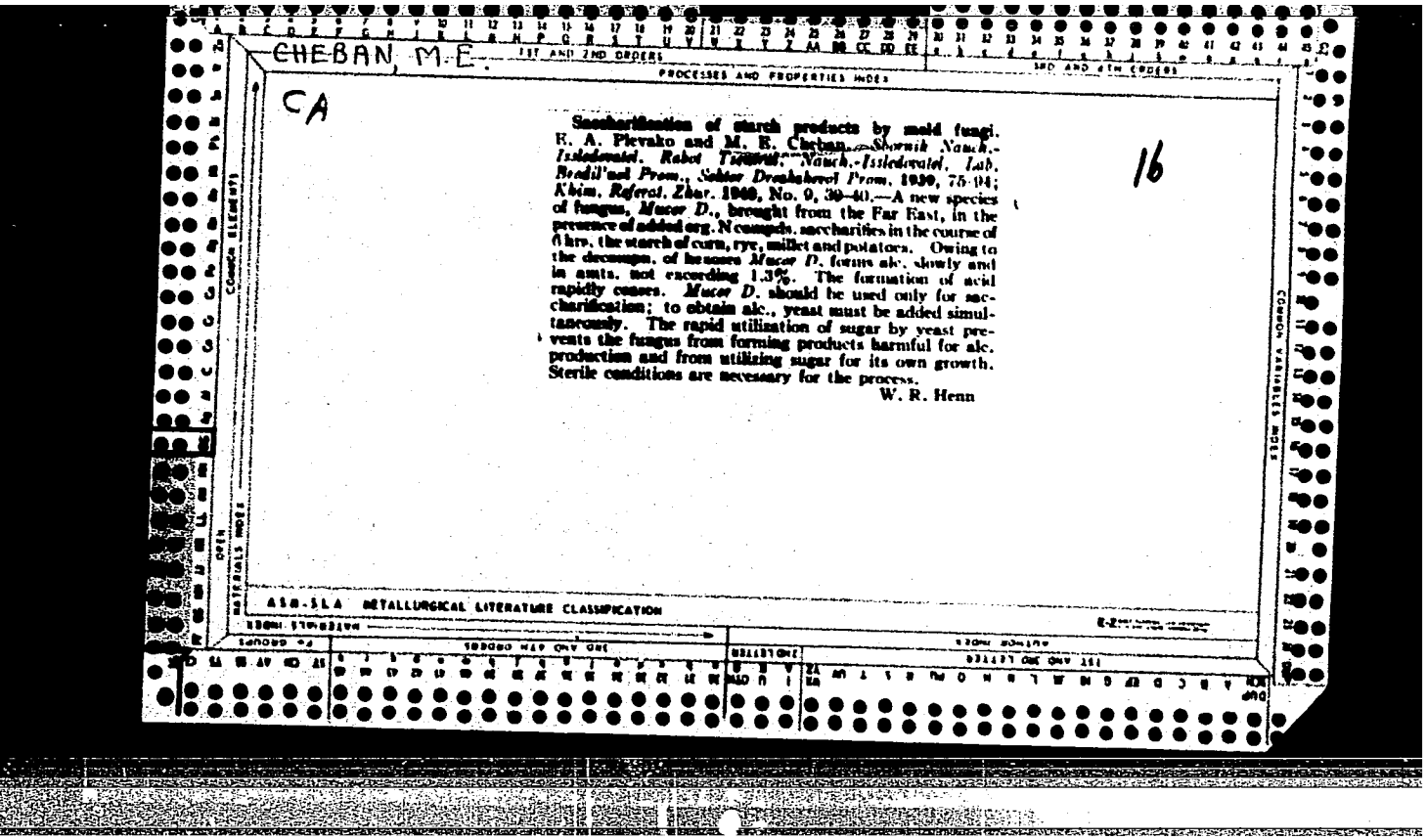
CHEBAN, I.T.

Small stand for cold and hot running-in of the GAZ 53 and GAZ-66 engines. Avt. prom. 30 no.9:37-38 S '64. (MIRA 17:10)

1. Gor'kovskiy avtomobil'nyy zavod.

CHEBAN, M.

Intensify weed control. Zemledelie 5 no.7:83-84 Jl '57.
(Weed control) (MLRA 10:6)


CHEBAN M.E.

CA

16

Saccharification of starch products by mold fungi. R. A. Pievako and M. E. Cheban.—*Sbornik Nauch.-Issledovatel. Rabot Tsentral. Nauch.-Issledovatel. Lab. Brodil'noi Prom., Sakhar Drozhzhevoi Prom.* 1939, 75-94; *Khim. Referat. Zhur.* 1940, No. 9, 39-40.—A new species of fungus, *Mucor D.*, brought from the Far East, in the presence of added org. N compds. saccharifies in the course of 6 hrs. the starch of corn, rye, millet and potatoes. Owing to the decompn. of hexoses *Mucor D.* forms alc. slowly and in amts. not exceeding 1.3%. The formation of acid rapidity ceases. *Mucor D.* should be used only for saccharification; to obtain alc., yeast must be added simultaneously. The rapid utilization of sugar by yeast prevents the fungus from forming products harmful for alc. production and from utilizing sugar for its own growth. Sterile conditions are necessary for the process.

W. R. Henn

CHEBAN, M. E.

BA

11 B

Determination of female sex hormone in the blood. I. A. Eskin and M. E. Cheban. *Doklady Akad. Nauk S.S.S.R.* 77 301-4(1951).—The following procedure is recommended for human cases: Take 10 ml. sample from the elbow vein, add 5 vols. 96% EtOH and shake 1 hr. Repeat EtOH treatment on the extn. residue of the 1st ext., combine both EtOH solns., evap., and hydrolyze the residue 40 min. with 1% HCl. Ext. with Et_2O, take up the ext. in 50% aq. glycerol and use the soln. for injection (intravaginal) into rats castrated 3-4 weeks before the test, using vaginal smears for the final test material after 24-48-hr. interval after last injection. Numerous results are given in tabular form on detns. in human subjects and rabbits. G. M. K.

1951

CHEBAN, M.E.

ESKIN, I.A.; CHEBAN, M.E.

Female sex harmone (estrogen) and its role in the sexual cycle.
Biul. eksp. biol. i med. 37 no.6:41-46 Je '54. (MLRA 7:8)

1. Iz otdela eksperimental'noy biologii (zav. prof. I.A.Eskin) Vsesoyuznogo instituta eksperimental'noy endokrinologii (dir. Ye.A.Vasyukova)
(ESTROGENS, in blood,
physiol. funct.)
(BLOOD,
estrogens, physiol. funct.)

ESKIN, I.A.; MIKHAYLOVA, N.V.; SVYATUKHINA, O.V.; CHEBAN, M.E.

Estrogen in the blood in women with breast cancer. Biul. eksp. biol. i med. 38 no.11:58-62 N '54. (MLRA 8:1)

1. Iz otdela eksperimental'noy biologii (zav. prof. I.A.Eskin) Vsesoyuznogo instituta eksperimental'noy endokrinologii (dir. prof. Ye.A.Vasyukova) i Gosudarstvennogo onkologicheskogo instituta imeni P.A.Gertsena (dir. V.V.Gorodilova)

(BREAST, neoplasms,
blood estrogens in)
(BLOOD,
estrogens in cancer of breast)
(ESTROGENS, in blood,
in cancer of breast)

GOKHBERG, I. TS. (Kishinev); CHEBAN, V.G. (Kishinev)

Reduction method for discrete analogs of Wiener-Hopf equations.
Ukr. mat. zhur. 16 no.6:822-828 '64 (MIRA 18:2)

CHEBAN, V. G.

"Elastic-Plastic Collision of Two Bars." Thesis for degree of Cand. Physicomathematical Sci. Sub 30 Jun 49, Sci Res Inst of Mechanics, Moscow Order of Lenin State U imeni M. V. Lomonosov.

Summary 82, 18 Dec 52, Dissertations Presented For Degrees in Science and Engineering in Moscow in 1949. From Vechernyaya Moskva, Jan-Dec 1949.

CHEBAN, V. G.

IA 242T94

USSR/Mathematics - Elasticity Jun 52
Impact

"Longitudinal Impact of Elastic-Plastic Rods," V. G. Cheban, Chair of Theory of Elasticity

"Vest Moskov U, Ser, Fiz, Mat, i Yest Nauk" No 4, pp 15-21

Analyzes impact of cylindrical rod, moving along its axis with specified velocity, upon the end of a fixed half-infinite rod of same cross section. Measurements of dimensions of residual zone of deformation and magnitude of deformation

242T94

allow one to determine dynamic characteristics of the linearly stabilizing material: modulus of elasticity, modulus of rigidity, limit of elasticity. Received 12 Feb 52.

242T94

1. CHIAN, V. G.

2. USSR (600)

4. Elastic Rods and Wires

7. Case of e lastic-plastic collision of rods of various materials. Prikl. mat. i mekh. 17 No. 2, 1953.

Studies certain cases (collision with small velocity; collision of elastic rod on elastic-plastic one; collision of elastic-plastic rod on elastic one) of the longitudinal collision between two rods of identical cross-section, on the assumption that the rods are made of different materials possessing differing mechanical properties (moduli of elasticity, yield points, etc.) and that the dependence between the conditional stresses and relative elongation for each of the materials can be considered to be linear hardening.

250T18

9. **Monthly List of Russian Accessions, Library of Congress, June 1953. Unclassified.**

CHEBAN, V.

Approximation of solutions to linear equations. Izv. AN Mold. SSR no.1:88-91 '63. (MIRA 18:3)

GRODZIYEVSKIY,V.I.; CHERAN,V.I.

Improving the D-54 engine oil pump. Avt. trakt. prom. no.6:30-31 Je '55. (MIRA 8:9)

1. Khar'kovskiy traktornyy zavod.
(Tractors--Engines)

CHEBAN, V.M., inzh.; ZAYNULLINA, R.S., inzh.

Power engineering characteristics of the inverter. Izv.vys. ucheb.zav.; energ. 2 no.6:129-132 Je '59.
(MIRA 13:2)

1. Novosibirskiy elektrotekhnicheskiy institut (for Cheban).
2. Transportno-energeticheskiy institut Sibirskogo otdeleniya AN SSSR (for Zayumullina). Predstavlena kafedroy elektricheskikh stantsiy setey i sistem.
(Electric current rectifiers)

ZAYNULLINA, R.S., insh.; CHEBAN, V.M., insh.

Experimental power characteristics of the inverter of a model for the transmission of d.c. current. Izv.vys.uchseb.zav.; energ. 3 no.4:4-10 Ap '60. (MIRA 13:6)

1. Transportno-energeticheskiy institut Sibirskogo otdeleniya AN SSSR (for Zaynullina). 2. Novosibirskiy elektrotekhnicheskiy institut (for Cheban). Predstavlena kafedroy elektricheskikh stantsiy, setey i sistem Novosibirskogo elektrotekhnicheskogo instituta.

(Electric current rectifiers)

ZAYNULLINA, R.S.; CHEBAN, V.M.

Determining the dynamic stability of a system with an inverter. Izv. Sib. otd. AN SSSR no.6:17-27 '62 (MIRA 17:7)

ZAYNULLINA, R.S.; CHEBAN, V.M.

Effect of the duration of inverter reversing on the dynamic stability. Trudy Transp.-energ. inst. Sib. otd. AN SSSR no.16: 99-103 '63. (MIRA 16:11)

Translation from: Referativnyy zhurnal. Mekhanika, 1957, Nr 7, p 143 (USSR) SOV/124-57-7-8398

AUTHOR: Chebanenko, A. I.

TITLE: Calculating the Bending Stiffness of Reinforced-concrete Members (Raschet zhestkosti izgibayemykh zhelezobetonnykh elementov)

PERIODICAL: Tr. Most. in-ta inzh. zh.-d. transp., 1956, Nr 84/5, pp 45-112

ABSTRACT: The method for investigating the bending stiffness of reinforced-concrete members proposed by V.I. Murashev [Treshchinoustoychivost', zhestkost' i prochnost' zhelezobetona (The Strength, Stiffness, and Resistance to Cracking of Reinforced Concrete). Moscow, 1950] is revised by the author to the extent that an empirical linear relationship with the stresses in the reinforcement is adopted for the coefficient of the influence exerted by the concrete in the tensile-stress zone. Though the author's revision does afford a certain simplification of the calculation procedures, it does not alter the fundamentals of the Murashev theory and cannot, therefore, eliminate any of that theory's inherent shortcomings. Moreover, the author's use of several empirical relationships arrived at indirectly compels one to fear that the calculation results obtained by this

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revised method may be valid only for those specific beams on the tests of which the method is based.

V. A. Gastev

CHEBANENKO, A.I., kand. tekhn. nauk.

Some problems in the theory of strains in reinforced concrete bent elements. Trudy MIIT 108:150-208 '59 (MIRA 13:3)
(Strains and stresses) (Reinforced concrete)

CHERANENKO, A.I., kand. tekhn. nauk

Studying stress-strain conditions developing in reinforced concrete bent elements subjected to static loads. Trudy MIIT 108: 209-252 '59 (MIRA 13:3)
(Strains and stresses) (Reinforced concrete)

CHEBANENKO, A.I., kand.tekhn.nauk

Investigating deformations of bent reinforced-concrete elements with T- and trapezoidal sections. Trudy MIIT no.126:174-191 '60. (MIRA 13:10)

(Strains and stresses)

CHEBANENKO, A.I., kand. tekhn. nauk, dotsent

Calculations for the bearing capacity and rigidity of flexed reinforced concrete elements taking into account the conditions under which they function. Trudy MIIT no.152:69-95 '62.
(MIRA 16:6)
(Precast concrete—Testing)

CHEBANENKO, A.I., kand. tekhn. nauk, dotsent

Theoretical and experimental diagrams of integral deformations of flexed reinforced concrete elements. Trudy MIIT no.152:96-112 '62. (MIRA 16:6)

(Precast concrete)
(Deformations(Mechanics))

CHEBANENKO, A.I., kand. tekhn. nauk, dotsent

Study of the stress-strain states of flexed reinforced concrete elements subject to repeated and protracted loading. Trudy MIIT no.152:113-130 '62. (MIRA 16:6)

(Precast concrete--Testing)

CHEBANENKO, I.I.

Folded structures of the Lysychans'k District of the northwestern margins of the Donets Ridge. Dop.AN URSR no.6:574-576 '56.
(MLRA 10:2)

1. Institut geologichnikh nauk AN URSR. Predstaviv akademik AN URSR V.G.Bondarchuk.
(Donets Ridge--Geology, Stratigraphic)

CHEBANENKO, I.I.

Second meeting in astrogeology. Geol.zhur. 16 no.2:92-93 '56. (MLRA 9:9)

(Planets)

CHERAMENKO, I.I.

Classification and methods of studying tectonic faults. Geol. zhur. 16 no.3:89-93 '56. (MLRA 9:11)
(Faults (Geology))

CHEBANENKO, I.I.

CHEBANENKO, I.I.

On the genesis of tectonic fissures in the carboniferous rocks of Lisichansk region in the northwestern part of the Donets ridge [with summaries in Russian and English]. Dop AN URSR no.3:303-305 '57. (MLRA 10:9)

1. Institut geologichnikh nauk Akademii nauk URSR. Predstavleno akademikom Akademii nauk USSR V.O.Bondarchukom.
(Lisichansk--Geology, Structural)

Chebanenko, I. I.

21-4-17/24

AUTHOR: Chebanenko, I.I.

TITLE: Origin of Folded Structure Formation in the Lisichansk Area of the North-Western Part of the Donets Ridge (Pochatok formuvannya skladchastykh struktur na ploshchi Lisichans'koho rayonu pivnichno-zakhidnoi chastyny Donets'-koho kryasha)

PERIODICAL: Dopovidi Akademii Nauk Ukrains'koi RSR, 1957, #4, pp 387-390 (USSR)

ABSTRACT: Based on a detailed study of lithological-stratigraphic sections of 500 drill holes sunk into the coal-bearing rocks of the Lisichansk district, the author compiled the maps of the bottom and roof rocks of the k_8, l_4 and l_8 coal seams.

The closed contours of sediment distribution, shown in Figures 2 and 3, coincide with the outlines of the folded structures (Figure 1). This regularity in the distribution of the roof and bottom rocks of the coal seams can serve as evidence that the folded structures of the northwestern outskirts of the Donets ridge began to form simultaneously with the process of sediment precipitation in the area of the Dnieper-Donets depres-

21-4-17/24

TITLE: Origin of Folded Structure Formation in the Lisichansk Area of the North-Western Part of the Donets Ridge (Pochatok formuvannya skladchastykh struktur na ploshchi Lisichans'koho rayonu pivnichno-zakhidnoi chastyny Donets'-koho kryasha)

sion.
The article contains 3 maps.
There are 7 Slavic references.

INSTITUTION: Institute of Geological Sciences of the Ukrainian Academy of Sciences

PRESENTED BY: Bondarchuk, V.H., Member of the Ukrainian Academy of Sciences

SUBMITTED: 14 December 1956

AVAILABLE: At the Library of Congress

Card 2/2

CHEBANENKO, I.I.

21-5-22/26

AUTHOR: Chebanenko, I.I.

TITLE: Geotectonic Significance of the Earth's Rotation (Geotektonicheskoye znacheniye vrashchatel'nogo dvizheniya zemli)

PERIODICAL: Dopovidi Akademii Nauk Ukrains'koi RSR, 1957, Nr 5, pp. 512-514 (USSR)

ABSTRACT: There are two trends in the modern geotectonical science. One of them considers the shifts of the Earth's crust as caused by internal reasons and does not take into account the Earth's rotation. Another trend in astrogeology was developed by V.G. Bondarchuk, B.L. Lichkov, M.V. Stovas, E. Kraus and V. Staub. An important step in learning the geological history of the Earth was made by M. Tetyayev (Ref.5) and V.G. Bondarchuk (Ref.2,3). On the basis of these investigations the author composes a scheme of correlations between displacements of the Earth's crust and its structure. From this tectonic genesis scheme one can trace the transition of the quantity of the Earth's crust displacements into new qualities of the structural petrographic state of its matter in the form of historical geological structures. The main conclusion from this scheme is that the principal moving factor in the Earth's geological development is non-uniform rotation. This motion gives rise to oscillating lifts and sinkages of the Earth's

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crust which, in their turn, perturb the gravitational and physico-chemical states of equilibrium. The accumulation of the oscillating motions of the Earth's crust generates a new quality in the structural-petrographic state of its matter, that is genetically connected structures.
The article contains one sketchy scheme and 5 Slavic references.

ASSOCIATION: Institute of Geological Sciences of the AN Ukrainian SSR (Instytut heolohichnykh nauk AN URSR)

PRESENTED: By V.G. (V.H.) Bondarchuk, Member of the AN Ukrainian SSR

SUBMITTED: 9 October 1956

AVAILABLE: Library of Congress

CHEBANENKO, I.I.

Tectonics of Lisichansk District in the northwestern part of the Donets Ridge. Geol. zhur. 17 no.1:29-38 '57. (MLRA 10:4)
(Lisichansk District--Geology, Structural)

CHEBANENKO, I.I.

"Mountain building" by R.W. Vab Bemmelen. Reviewed by I.I. Chebanenko. Geol. zhur. 17 no.3:92-94 '57. (MIRA 11:2)
(Indonesia--Geology, Structural)

CHEBANENKO, I. I. Cand Geol-Min Sci -- (diss) "Tectonics of the Lisichansk elevation of the western part of the Donets ridge." Kiev, 1958. 17 pp (Min of Higher Education. Kiev State Univ im T. G. Shevchenko), 110 copies (KL, 11-58, 114)

CHEBANENKO, I.I.

Trenchlike sags of platforms. Dop.AN URSR no.4:520-522 '61.
(MIRA 14:6)

1. Institut geologicheskikh nauk AN USSR. Predstavleno akademikom AN USSR V.G. Bondarchukom.
(Faults (Geology))

CHEBANENKO, I.I.

Consolidation of Pre-Cambrian massifs. Dop. AN URSR no.5:656-659 '61. (MIRA 14:6)

1. Institut geologicheskikh nauk AN USSR. Predstavleno akademikom AN USSR, V.G. Bondarchukom [Bondarchuk, V.H.].
(Geology, Structural)

CHEBANENKO, I.I.

Some proofs of contact metamorphism of gneisses on a regional scale. Dop. AN URSR no.6:787-788 '61. (MIRA 14:6)

1. Institut geologicheskikh nauk AN USSR. Predstavleno akademikom AN USSR V.G. Bondarchukom.
(Czechoslovakia—Gneisses)

CHEBANENKO, I.I.

Planetary faults (lineaments) of the lithosphere. Dop. AN URSR no.9:1227-1230 '62. (MIRA 18:4)

1. Institut geologicheskikh nauk AN UkrSSR.

AM4007939 BOOK EXPLOITATION S/

Chebanenko, Ivan Il'ich

Fundamental principles in fault tectonics of the earth's crust and its problems (Osnovny*ye zakonomernosti razlomnov tektoniki zemnoy kory* i yeye problemy*) Kiev, Izd-vo AN USSR 1963. 152 p. illus., biblio., fold. maps. 1200 copies printed. Series note: Akademiya nauk Ukrainskoy SSR. Institut geologicheskikh nauk. Trudy*. Seriya geotektoniki, vy*p. 12

TOPIC TAGS: geology, tectonics, regional tectonics fault system, fault origin, lineament, structural geology, faulting

PURPOSE AND COVERAGE: This book is intended for geologists and specialists in related fields interested in the problems and possible causes of crustal deformations particularly with regard to major large-scale lineaments. Using specific examples from various continents, the basic regularities of the orientation and structure of the lineaments are analyzed. The relationships between lineaments and volcanism are examined. In the author's opinion one of

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the main causes of faulting is the adjustment of the crust to the irregular rotation of the globe about its axis.

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Tectoorogenic importance of major faults in the earth's crust -- 114

List of references -- 144

SUB CODE: AS SUBMITTED: 20Jun63 NO REF SOV: 189

OTHER: 181 DATE ACQ: 28Oct63

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CHEBANENKO, Ivan Il'ich; BONDARCHUK, V.G., akademik, otv. red.; OVCHAROVA, Z.G., red.

[Problems of the fold belts of the earth's crust in the light of block tectonics.] Problema skladchatykh poiasov zemnoi kory v svete blokovoi tektoniki. Kiev, Izd-vo "Naukova dumka, "1964. 142 p. (Akademiia nauk URSR, Kiev. Instytut geologichnykh nauk. Trudy, no. 16)

1. AN UkrSSR (for Bondarchuk).

CHEBANENKO, I.I.

Fracture-block tectonics in the region of the Carpathian Mountains. Dop. AN URSR no.11:1509-1512 '64.

(MIRA 18:1)

1. Institut geologicheskikh nauk AN UkrSSR. Predstavleno akademikom AN UkrSSR V.G. Bondarchukom [Bondarchuk, V.H.].

SOKOLOVSKIY, Igor' Leonidovich; VOLKOV, Nikolay Georgiyevich; CHEBANENKO, I.I., kand. geol.-miner. nauk, otv. red.; CHEKHOVICH, N.Ya., red.

[Methods for the stage-by-stage study of recent tectonics; based on a study of the southwestern part of the Russian Platform] Metodika poetapnogo izucheniia neotektoniki; na primere iugo-zapada Russkoi platformy. K VII kongressu Mezhdunarodnoi assotsiatsii po izucheniiu chetvertichnogo perioda (INQUA). Kiev, Naukova dumka, 1965. 132 p. (MIRA 18:6)

CHEBANENKO, I.I.

Series of cause-and-effect relations between the types of crustal tectonic movements and the nature of isostatic anomalies. Dop. AN URSR no.6:755-758 '65. (MIRA 18:7)

1. Institut geologicheskikh nauk AN UkrSSR.

SLENZAK, Oleg Igorevich; CHEBANENKO, I.I., otv. red.; SHTUL'MAN, I.F., red.

[Structure of the Precambrian of the Ukraine as exemplified by the southwestern part of the Ukrainian crystalline shield] Pro strukturu ukrains'koho dokembriiu; na prykladi pivdenno-zakhidnoi chastyny Ukrains'koho krystalichnoho shchyta. Kyiv, Naukova dumka, 1965. 137 p. (MIRA 18:9)

ACC NR: AP6034403 SOURCE CODE: UR/0021/66/000/010/1333/1336

AUTHOR: Cherednychenko, O. I.—Chernednichenko, A. I.; Burmistenko, V. M.; Tokovenko, V. S.; Chebanenko, I. I.;

ORG: Institute of Geological Sciences, AN URSR (Instytut heolohichnykh nauk AN URSR)

TITLE: Laboratory simulation of large fractures (lineaments) of the earth

SOURCE: AN UkrRSR. Dopovidi, no. 10, 1966, 1333-1336

TOPIC TAGS: geomorphology, geodynamics, ~~geologic research facility~~ crustal fracture, earth crust, tectonics

ABSTRACT: This article describes a series of laboratory model experiments on the effect of the earth's rotational stresses and the nature of the resulting crustal deformations. Two systems of fractures along azimuths of 40—45° and 315—320° originated under the effect of rotational stresses. The fractures formed are linear and coincide with principal deep-seated fracture zones of the earth's crust. The experiments corroborate the theoretical principles of the theory of tectogenesis with respect to the importance of the rotational forces of

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ACC NR: AP6034403

the earth during geotectogenesis, as developed by V. G. Bondarchuk, and are in agreement with the conclusions of the Soviet school of geologists as to the importance of deep-seated fractures in the crustal structure. The experiments confirm I. I. Chebanenko's conclusion that the two deep-seated fracture systems—the northwestern and northeastern—are of primary importance in the structure of the earth's crust. Orig. art. has: 1 figure.

SUB CODE: 08/ SUBM DATE: 27Dec65/ ORIG REF: 004/ ORIG REF: 001

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KALISH, Samuil Ionovich; CHEBANENKO, Konstantin Ivanovich; BOGOPOL'SKIY, B.Kh., otv. red.; SHOROKHOVA, A.V., red. izd-va; OVSEYENKO, V.G., tekhn. red.

[Handbook for the mine hoist operator]Spravochnik mashinista shakhtnoi pod"emnoi mashiny. Moskva, Gosgortekhizdat, 1962. 207 p. (MIRA 15:9)

(Mine hoisting)